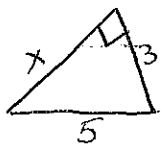
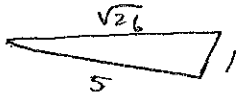
Chp 7 practice Questions

1. Identify unknown side as leg or hypotenuse.

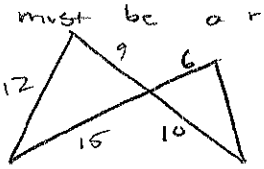


2. The top of a ladder rests against a wall, 23 feet above the ground. The base of the ladder is 6 feet away from the wall. What is the length of the ladder?

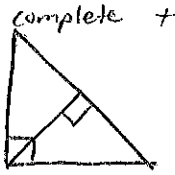
3. Tell whether the triangle is a right triangle.

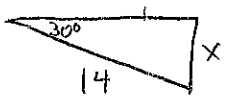


4. Explain why ∠D must be a right ∠



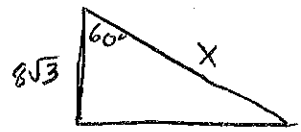
5. Write a similarity statement for the three similar △'s in the diagram. Then complete the proportion $\frac{?}{SQ} = \frac{SQ}{TQ}$



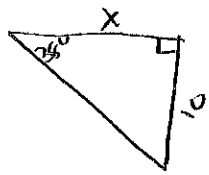
6. 

Find value of X. Write answer in simplest radical form.

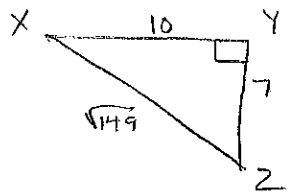
7. Find the value of x.



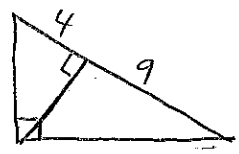
8. Find the value of X to the nearest tenth.



9. Find sin X and cos X. Write answers as a fraction, and as a decimal. Round to four decimal places, if necessary.



10. Find value of X.



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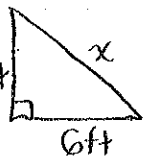
Chapter 7 Solutions

1. x = leg $\quad 5^2 = 3^2 + x^2 \quad 16 = x^2 \quad \boxed{x = 4}$

2. 

$x^2 = 23^2 + 6^2 \quad x^2 = 565 \quad \boxed{x \approx 23.77 \text{ ft}}$

3. $(\sqrt{26})^2 = 5^2 + 1^2 \quad 26 = 25 + 1 \rightarrow$ **yes** it is a right triangle

4. $\angle D$ must be a right angle because the triangle similar to it is a right triangle and all similar shapes have congruent angles. The right angle must be $\angle D$ because it's corresponding angle on the other triangle is $\angle A$, which is a right angle.

5. $\triangle QST \sim \triangle SRT \sim \triangle QTS \quad \frac{TQ}{SQ} = \frac{SQ}{TQ}$

6. $\sin(30) = \frac{x}{14} \quad \boxed{x = 7}$

7. $\boxed{x = 16\sqrt{3}}$

30	60	90
x	$x\sqrt{3}$	$2x$

30	60	90
$8\sqrt{3}$	24	$16\sqrt{3}$

8. $\tan(38) = \frac{10}{x} \quad \boxed{x \approx 12.8}$

9. $\sin(x) = \frac{7}{\sqrt{149}} \approx 0.5735 \quad \cos(x) = \frac{10}{\sqrt{149}} \approx 0.8192$

10. $\frac{4}{x} = \frac{x}{9} \quad x^2 = 36 \quad \boxed{x = 6}$